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(54) TILE ASSEMBLY AND METHOD OF
INSTALLING SAME

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ABSTRACT

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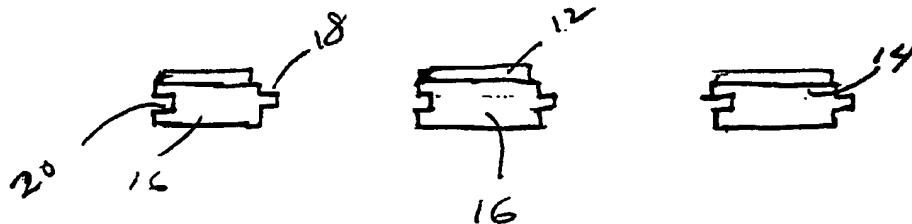
A tile assembly and method of installing tile is shown where each tile has an underside, and a support board is adhered to the underside of one or more tiles. One such tile assembly is connected to another tile assembly by a tongue and groove arrangement, where each tile assembly is not cemented, screwed or otherwise adhered to the floor. The space between the tiles is filled with a flexible group made of rubber silicone, white sand and dye. The tiles may be made of any suitable material such as of ceramic, stone, marble, granite, vinyl composition tile (vct), brick, or other composite materials that use mortar to set the material to a floor or sub-floor.

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Related U.S. Application Data

(63) Continuation-in-part of application No. 09/576,875, filed on May 22, 2000, now abandoned.



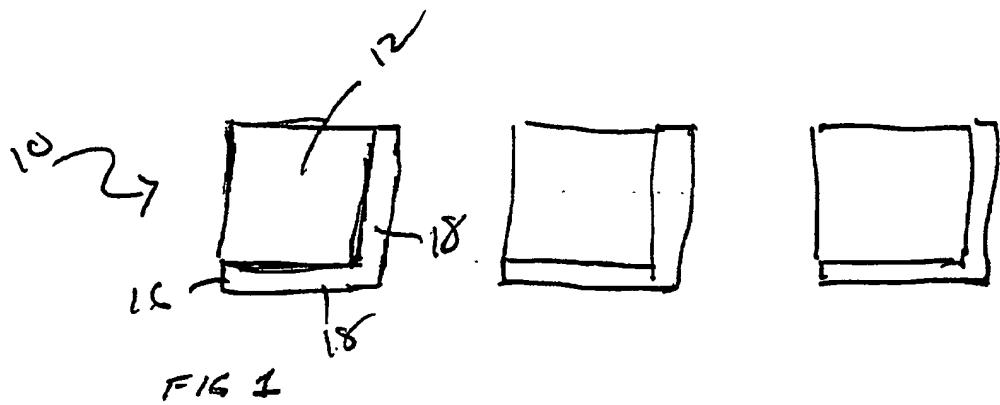


FIG. 1

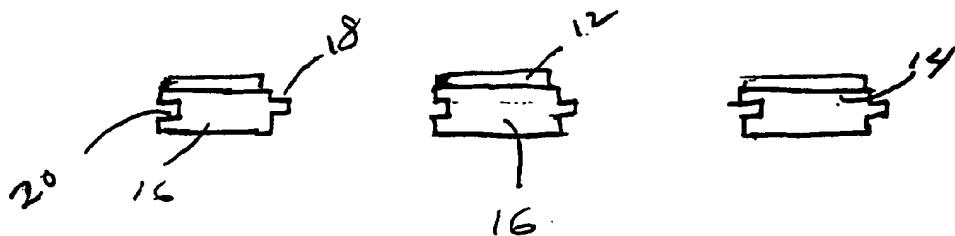


FIG. 2

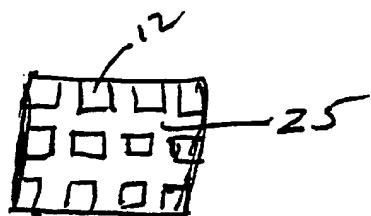


FIG. 3

TILE ASSEMBLY AND METHOD OF INSTALLING SAME

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation-in-part of U.S. patent application Ser. No. 09/576,875, filed May 22, 2000, titled Ceramic Tile Assembly and Method of Installing Same.

BACKGROUND OF THE INVENTION

[0002] This invention relates generally to the field of installing floor coverings, and more particularly to tile flooring and a method of installing same.

[0003] Since the beginning of floors people have employed a variety of floor coverings including rugs, carpet, wood and tile to name only a few. A significant portion of floor covering installed to day is tile, usually coming in regular sizes, such as rectangular of varying dimensions, or square, a subset of rectangular, also of varying dimensions. Tile may be made of ceramic, porcelain, stone, marble, granite, vinyl composition tile (vct), brick, or other composite materials that use mortar or the like to set the material to a floor or sub-floor and may be of any thickness.

[0004] Two general methods of installing tile exist today. The first is for installing tile on a concrete slab. In this case, the tile is usually glued to the concrete using a mortar such as available commercially and known as Thinset or other suitable adhesive. A second method is usually used when installing tile to a wooden sub-floor, as is often found in pier-and-beam homes, or on second floors of homes. In the wood sub-floor installation, tile is usually glued to sheets of plywood that have already been rigidly adhered to the sub-floor usually by nails spaced 4-to-6 inches apart. Other forms of adhesion to the floor or sub-floor may be employed including screws. These forms of adhering the tile to the floor are permanent in the sense that, though they can be removed, it takes a significant amount of time and effort to remove. For purposes of this application the term floor will include a floor and sub-floor, as it is the placement of the tile on the floor, regardless of whether the floor is indeed a floor or sub-floor, rather than the type of floor to which the tile is placed.

[0005] There exists a problem when the floor to which the tile is installed moves, such as when a house settles into the ground on which is built, or when the ground shifts for other reasons. When this situation occurs, and it occurs quite often in newly built homes, the tile, and grout between the tile, may crack, requiring expensive and time consuming repair. Further, removing conventionally installed tile is a time and effort consuming, expensive and messy process.

SUMMARY OF THE INVENTION

[0006] The primary object of the invention is to reduce cracking of installed tiles.

[0007] Another object of the invention is to allow faster installation of floor tile.

[0008] Another object of the invention is to reduce cracking of grout between installed tiles.

[0009] A further object of the invention is reduces cost of tile floor installation and reduce needed repairs.

[0010] Another object of the present invention is to reduce the time and effort in removing installed tile flooring.

[0011] In accordance with a preferred embodiment of the invention, an improved tile assembly comprises one or more tiles each having an underside, and one or more connectable support boards adhered to underside of the one or more tiles, adapted to be placed on a floor without permanently adhering to the floor.

[0012] In accordance with another preferred embodiment of the present invention, a method of installing tiles comprises the steps of adhering one or more of the tiles to a first support board, placing the first support board on a floor without adhering the support board to the floor, and connecting a second support board having tile thereon to the first support board on the floor.

[0013] Other objects and advantages of the present invention will become apparent from the following descriptions, taken in connection with the accompanying drawings, wherein, by way of illustration and example, an embodiment of the present invention is disclosed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] The drawings constitute a part of this specification and include exemplary embodiments to the invention, which may be embodied in various forms. It is to be understood that in some instances various aspects of the invention may be shown exaggerated or enlarged to facilitate an understanding of the invention.

[0015] FIG. 1 is an overhead view of tile assemblies in accordance with a preferred embodiment of the invention.

[0016] FIG. 2 is a side view of the tile assemblies of FIG. 1.

[0017] FIG. 3 is an overhead view of the invention showing multiple tile assemblies connected to one another.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0018] Detailed descriptions of the preferred embodiment are provided herein. It is to be understood, however, that the present invention may be embodied in various forms. Therefore, specific details disclosed herein are not to be interpreted as limiting, but rather as a basis for the claims and as a representative basis for teaching one skilled in the art to employ the present invention in virtually any appropriately detailed system, structure or manner.

[0019] Turning first to FIG. 1 there is shown a tile assembly 10 in accordance with a preferred embodiment of the present invention. More specifically there is shown a tile 12 having an underside portion 14. Underside portion 14 of tile 12 is adhered to support board 16 by any conventional method of adhesion such as waterproof glue, cement, epoxy, or otherwise to secure tile 12 to support board 16. Commercial products are available for adhering tile 12 to support board 14 and include those manufacture by Dapp or Mapay Mastic.

[0020] Tile 12 may be of a variety of materials that typically use mortar or the like to adhere to a floor or

sub-floor, and include of ceramic, porcelain, stone, marble, granite, vinyl composition tile (vct), brick, or other composite materials. In addition, the tile may be of a variety of thickness.

[0021] Support board 16 is designed to be inter-connectable with a like support board having tiles adhered thereon. In the illustrated embodiment as more detailed in FIG. 2, there is shown support board 16 having tongue 18 about two adjacent sides thereof and groove 20 about the other two adjacent sides thereof. In this way, each tile assembly 10 may connect to another tile assembly 10 by fitting tongue 18 of one tile assembly 10 into groove 20 of another tile assembly 10. Repeating this process in a sufficient number of times will result in a floor, or portion thereof, being covered by installed tile. At any time, such as when a wall is placed leaving insufficient floor room to install an entire tile assembly 10, tile assembly 10 may be cut to fit as has been accomplished in the floor covering installation art for a considerable time.

[0022] It will be appreciated by those of skill in the art that there are a variety of ways to connect one tile assembly to an adjacent tile assembly, such as abutting one against the other, or having the sides designed as mating surfaces of a variety of shapes, or otherwise as may be appropriate for the situation in which the tile assembly may be installed.

[0023] In the preferred embodiment, support board 16 is made of a combination of fiberglass and cement and is commercially available from the Haibecker company in $\frac{1}{2}$ inch thickness, but may be of any suitable material in any suitable thickness for the particular situation in which the tile assembly is to be employed. Also in the preferred embodiment, tile assembly 10 is 12 inches by 12 inches square. It will be appreciated that any size may be employed such as any size square, any size triangle, any size rectangle, any size hexagon, any size L-shaped figure, or any regular connectable shape, or even a combination of shapes that when repeated can connect one set to the other. It will also be appreciated that irregular shapes may be placed on assembly 10 for installation.

[0024] In the preferred, illustrated embodiment of FIGS. 1 and 2, tile assembly 10 is shown having a single tile 12 adhered to support board 16. However, it will be appreciated that any number of tiles 12 may be adhered to support board 16 and in any pattern as desired.

[0025] In practice, tile 12 on support board 16 is not as large as the support board 16 so that upon installation of one support board 16 connected to another support board 16 a distance exists between adjacent tiles 12. In the situation when more than one tile is adhered to support board 16, there also exists spacing between tiles. In the traditional application of installing tiles flooring, a grout is placed between adjacent tiles 12. In the preferred embodiment of the present invention as shown in FIG. 3, grout 25 is made of a combination of rubber silicone, sand and dye. In this manner, grout 25 is flexible and made to resist cracking. Further, this combination may be made to any color depending upon the dye selected. In the preferred embodiment, grout 25 is made from 1 pound rubber silicone, $1\frac{1}{2}$ pounds white sand and dye added to obtain a desired color.

[0026] In the typical installation, multiple tile assemblies 10 are prepared at a location away from the installation site

and delivered to the installation site. At the installation site, tile assembly 10 is placed on the floor and another tile assembly 10 is connected to the first tile assembly 10. This process is repeated until the desired floor space is covered with tile assembly 10 sections, or portions thereof. After tile assembly 10 portions are installed, grout 25 is placed between tiles 12 in the normal and well-known manner.

[0027] In accordance with an important feature of the present invention, during installation, tile assembly 10, through support board 16 is merely placed on floor without adhering tile assembly 10 to the floor, either by cement, screwing, or other forms of adhesion. In this way, when the floor moves through the house settling or otherwise, tile assembly 10 will resist cracking because of greater allowance to move independently of floor movement.

[0028] While the invention has been described in connection with a preferred embodiment, it is not intended to limit the scope of the invention to the particular form set forth, but on the contrary, it is intended to cover such alternatives, modifications, and equivalents as may be included within the spirit and scope of the invention as defined by the appended claims.

What is claimed is:

1. A tile flooring assembly comprising:
one or more tiles each having an underside; and
one or more connectable support boards that do not need
to be adhered to a floor adhered to underside of the one
or more tiles.
2. Tile flooring assembly as claimed in claim 1 wherein
said support board is generally rectangular and has a tongue
on one side and a groove on another side so that one support
board may be connected to another support board.
3. Tile flooring assembly as claimed in claim 1 wherein
said tile is adhered to the support board by waterproof glue.
4. Tile flooring assembly as claimed in claim 1 further
comprising two or more tiles adhered to the support board.
5. Tile flooring assembly as claimed in claim 4 further
comprising grout between at least two tiles.
6. Tile flooring assembly as claimed in claim 1 wherein
said tile dimension is less than the support board dimension.
7. Tile flooring assembly as claimed in claim 1 wherein
tile is made from one or more of the following group:
ceramic, porcelain, stone, marble, granite, vinyl composition
tile (vct), brick, and composite materials.
8. A method of installing tile comprising the steps of:
adhering one or more tiles to a first support board;
placing the first support board on a floor without adhering
to the floor; and
connecting a second support board having ceramic tile
thereon to the first support board on the floor without
adhering to the floor.
9. A method of installing tile as claimed in claim 8
wherein the tile is made from one or more of the following
group: of ceramic, porcelain, stone, marble, granite, vinyl
composition tile (vct), brick, and composite materials.

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